joyment in his remaining years looking after a fruit farm, solving problems in various departments of mathematics and writing articles on mathematcial, scientific, and other subjects.

During his residence in Louisiana, he was chief engineer of the Kansas, Watkins & Gulf Railroad; Lake Charles & Gulf Railroad; North American Land and Timber Co. etc.

Professor Philbrick was a contributor to various mathematical and scientific journals, including *The Analyst, The Mathematical Magazine, The Mathematical Visitor, The Engineering News,* and *The Mathematical Monthly.*

In each of the mathematical journals mentioned above, appear a great many of his excellent solutions of problems of various kinds. In the *Mathematical Magazine* is a brief article of his in which he developes a new method for finding the superior limes of a root of an algebraic equation. His method has considerable merit, and is, in general, superior to the common method. In the *Mathematical Magazine* also appears an article of his "On the Abuse of Logarithms." This elicited a reply by Prof. Herbert A. Howe of the University of Denver, Denver, Colorado, and occasioned a long friendly controversey,

In 1901 Professor Philbrick wrote a Field Manual for Engineers. This work which was published by John Wiley & Sons, will take its place among the best works on that subject for many years to come. It is well written and has received the highest commendation from prominent civil engineers.

Professor Philbrick was a man of keen intellect. He was entirely frank and fearless in the expression of his views. He wrote many controversial articles championing the Scientific Education, Metric System, Spelling Reform, Liberal Religion, etc. Three grown children mourn the loss of the kindest of fathers.   F.

BOOKS AND PERIODICALS.

The Foundations of Geometry. By David Hilbert. Authorized Translation by E. J. Townsend, Ph, D., University of Illinois. Chicago: The Open Court Publishing Co. 1902. Pages, vii+132.

Readers of the American Mathematical Monthly, may consult a technical review of this translation in *Science,* Vol. XVI. No. 399. Aug. 22, 1902. pp. 307-8, where in the interest of merest justice are pointed out some few among the blemishes in what Professor Townsend puts forth as a translation of Hilbert's beautiful 'Festschrift.' These blemishes are the more indefensible because Professor Townsend had before him, in addition to the limped original, the admirable French translation of L. Langel.

For example, Hilbert, so studiously sparing of words, uses the word *Erklarung* nine times on his first thirteen pages.

Townsend never renders it at all. Where he adds from Langel, he seems to have no better luck with his French than with his German. For example, p. 25, "This axiom gives us nothing directly concerning the existence of limiting points or of the idea of converg-

ence" is how he renders, 'Cet axiome ne nous dit rien sur l' existence de points limites ni sur la notion de convergence.'

On p. 125, the translation reads: "We easily see that the criterion of theorem 44 is fulfilled, and, consequently, it follows that every regular polygon can be constructed by the drawing of straight lines and the laying off of segments." From this we should suppose that Professor Townsend studied his geometry from the popular treatise of Mr. Wentworth between 1877 and 1887, which during those years contained on p. 224, proposition XIII § 387:

"To inscribe a regular polygon of any number of sides in a given circle."

GEORGE BRUCE HALSTED.

The Book We Need. By Leon Stefflre, LL. B., of Bowdle, S. Dak. 8vo. Cloth. 218 pages. Price $1.00. San Francisco: The Whitaker & Ray Co.

The title of this little book does not in the least suggest the nature of the subject matter. There are many books that are urgently needed by most of us and perhaps this is one that is needed by some of us. The book is really an elementary arithmetic in which are introduced a few deviations from customary usage. In the first place, the author uses the Greek letter delta, inverted, instead of the decimal point.

The work closes with an epilogue in which the author advances a number of novel ideas.

The printing is not very good as there is too much uniformity in type throughout.

B. F. F.

The Business Man's Arithmetic. By Prof. J. S. Hunter. 8vo. Stiff Paper Back. 71 pages. Price 25cts. San Francisco: The Whitaker & Ray Co.

In this little pamphlet, the author has attempted to develop a system of computation, simple, brief, and sufficiently comprehensive as to be applicable to any kind of problem in any kind of business, and which presents no elaborate rules to be memorized by the learner. The author has simply made cancellation the basis of his system. This principle, I presume, is used already by nine-tenths of the practical computers of the country. Even this book in the hands of one unacquainted with fundamental principles would accomplish very little. A book to be put in the hands of pupils should always present principles and not rules or "systems." B. F. F.

Elementary Arithmetic of the Octimal Notation. By Geo. H. Cooper. 8vo. Stiff Paper Back. 70 pages. Price, 25cts. San Francisco: The Whitaker & Ray Co.

The object of this little work seems to be to revolutionize the present decimal system of notation. The author says, "Any attempt to perpetuate the use of the decimal system is nothing short of a crime against humanity, since it fails in every department." It has long been observed that some other than the decimal system would be more convenient, for example, the duo-decimal system in which 12 is the radix. But to change a system which has grown up with the race, and which answers so admirably the purposes which it is to serve, as does the decimal system of notation, seems to me exceedingly futile. Would it not be far better to spend our energies in advocating a universal adoption of the decimal system of weights and measures, rather than waste our powers in trying to establish an entirely new system? B. F. F.

Differential and Integral Calculus. By Virgil Snyder, Ph. D. and John I. Hutchinson, Ph. D., of Cornell University. 8vo. Cloth. xvi+320 pages. Price, $2.50. New York and Chicago: The American Book Co.

This book compares very favorably with the others of the Cornell Mathematical Series. The part of the work on Differential Calculus is based largely upon McMahon & Snyder's Differential Calculus while the part on the Integral Calculus is entirely new.

The exercises are new and are carefully graded. Numerous illustrative examples are worked out and accompanied by helpful suggestions. The Derivative is presented vigorously as a limit. The treatment throughout the book is simple, clear, practical, and thoroughly rigorous, and in the hands of a live instructor will accomplish great good.

<div style="text-align: right">B. F. F.</div>

The School Vistior An Elemenary Monthly Journal, Devoted to Difficult Work in Common School Studies. Price, $1.00 per year in advance. Published bp John S. Royer & Sons, Columbus, O.

The School Visitor was started in 1880, by Professor Royer, and its publication continued for 15 years, at the end of which time, owing to the nervous strain it caused and the tax it levied on the vital force of its editor, it was discontinued until 1900.

It is now appearing with all the vigor of its earlier days, and we trust that it may long continue to cultivate the minds and gladden the hearts of thousands of teachers who avail themselves of its influence.

The School Visitor is the most practical and stimulating periodical that the ordinary teacher can read. During the first year of its publication, it received contributions in mathematics from Prof. E. B. Seitz, Dr. Artemas Martin, Prof. Henry Gunder, and Dr. William Hoover, and the contributions of these gentlemen were sources of inspiration at that time to the writer. The *Visitor* in its mathematical department has at present the support of our valued contributor, Dr. G. B. M. Zerr, who solves every difficult problem that appears in it.

<div style="text-align: right">B. F. F.</div>

The American Journal of Mathematics. Edited by Frank Morley and others. Published quarterly, under the auspices of Johns Hopkins University. Price, $5.00 per year.

The October number contains the following articles: On systems of Linear Differential Equations of the First Order, by Maxime Bocher; On the Quarternary Linear Homogenious Group and the Ternary Fractional Group, by T. M. Putnam; On Cardinal Numbers by A. N. Whitehead; On a Method of Constructing all the Groups of Order p^m, by G. A. Miller; Non-Euclidean Properties of Plane Cubics and of their First and Second Polars, by Henry Freeman Stecker.

<div style="text-align: right">B. F. F.</div>

Annals of Mathematics. Published quarterly, under the auspices of Harvard University. Price, $2.00 per year in advance..

The October number cantains the following articles: The Geodesic Lines on an Anchor Ring, by Dr. G. A. Bliss; Proof of a Theorem concerning Isosceles Triangles, by Prof. H. F. Blichfeldt; An Elementary Exposition of Frobenius's Theory of Group-Characters and Group-Determinants, by Dr. L. E. Dickson; Communication concerning Mr. Ransom's Mechanical Construction of Conics, by Dr. E. V. Huntington.

<div style="text-align: right">B. F. F.</div>

Periodicals Received: *The American Monthly Review of Reviews; The Literary Digest; Popular Astronomy*, November Number; *Monthly Weather Review; Scientific American; Mathematical Gazette; The Mathematical Messenger; The University Herald; The Ohio Educational Monthly; The Onio Teacher; Le Matematiche; Periodico di Matematica; School Science; The School Visitor; The Open Court.*

<div style="text-align: center">ERRATA.</div>

Page 247, middle, in η_6' the term $+\rho_2\eta_5$ is omitted.

In solution of problem 112, Miscellaneous, "$A-C+B-D$" should read $A-C-B+D$, and the corresponding corrections throughout.